

가

I.

가 (marker)
 osteocalcin, osteonectin,
 collagen type - C propeptide ,
 pyridinolin,
 deoxypyridinolin 10)

1). 가 가
 30 - 40 가 가
 가 가
 가 가
 2,3). 가 가
 가 가
 4) 가 가
 가 가
 5). 가 가
 DEXA(dual energy X - ray absorp -
 tiometry) 가 (trace element)
 16), 가
 6,7). 가 가
 가 가
 17,18). 가 99%

* 1995

가 -70 Defreezer
 2Mℓ
 (TISAB III) 0.2Mℓ 가
 (Orion Co., U.S.A.)

19 - 21)

가

(2)

22)

가

가

dual energy X - ray absorptiom -
 etry (DEXA)

23,24)

(LUNAR - 3 Lunar Co., U.S.A)

2

4

25)

가

가

calcium , phosphorus , alkaline
 phosphatase , hemoglobin

가

(3)

2

II.

periodontal probe(William probe, HuFriedy,
 U.S.A.) (plaque index),

1.

(gingival index)

6

(attachment level)

28 (, 60.7 ± 4.9)

(panoramic view)

21 (, 38.8

가 . ,

± 5.4)

3

가

2.

3.

(1)

10

Table 1. Comparison of general conditions between postmenopausal and control group

| | postmenopausal(n=28) | control(n=21) |
|------------|----------------------|---------------|
| Age | 60.7 ± 4.9 | 38.8 ± 5.4 |
| Height(cm) | 152 ± 4.5 | 155 ± 3.8 |
| Weight(kg) | 57.8 ± 5.6 | 55.6 ± 4.8 |
| Obesity(%) | 105.5 ± 9.8 | 103.5 ± 6.6 |
| ALP* | 99.5 ± 18.8 | 101.5 ± 13.4 |
| FI# | 0.46 ± 0.34 | 0.37 ± 0.29 |

Values are mean ± SD, ALP*: alkaline phosphatase level in serum(U/L)

FI#: urinary fluoride concentration(mg/)

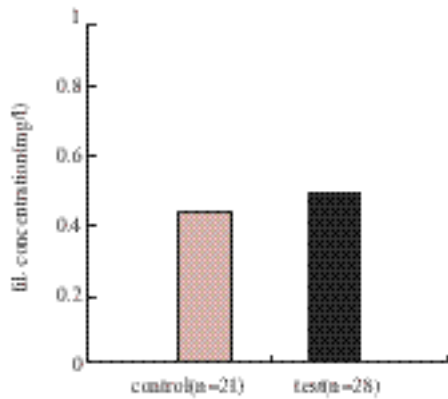


Figure 1. The mean urinary fluoride concentration in postmenopausal and control group

student t - test

III.

1.

28
60.7 38.8
21
152 cm, 57.8 kg, 105.5% 155
cm, 55.6 kg, 103.5% calcium
phosphorus , alkaline phosphatase
hemoglobin

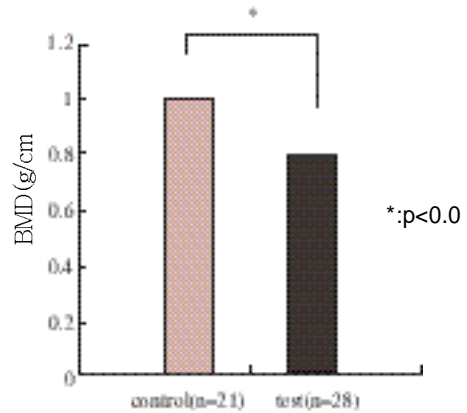


Figure 2. Lumbar spine bone mineral density of postmenopausal and control group

Table 2. Comparison of oral conditions between postmenopausal and control group

| | postmenopausal (n=28) | |
|-------------------------------|-------------------------|--------------|
| control(n=21) | | |
| number of teeth | 16.5 ± 2.9 [†] | 21.9 ± 3.8 |
| means of PD [†] (mm) | 3.01 ± 0.31 | 2.72 ± 0.34* |
| means of AL [‡] (mm) | 3.38 ± 0.38 | 3.14 ± 0.26* |
| percent of BOP (%) | 42.3 ± 10.8 | 39.9 ± 13.1 |

Values are mean ± SD * :p<0.05

PD[†]: probing depth, AL[‡]: Attachment level, BOP : Bleeding on probing

(Table 1).

0.46 ± 0.34 mg/ , 0.37 ± 0.29 mg/

(Table 1,

Figure 1).

2

4

0.82 ± 0.11 g/cm², 0.96 ± 0.19 g/cm²

가

(p<0.05, Figure 2).

2.

16.5 ,

glucocorticoid

8)

가

, Colles

32)

가

15)

가

가

가 15)

가

33).

가

dual energy X -
ray absorptiometry (DEXA)

von Wowern 31)

가가 가

6,7).

가 22)

osteocalcin,

tyridinoline,

가

deoxypyridinoline

가

가

5,34,35)

가

36,37)

23,24,39)

가

가

가

11 - 14)

von Wowern 31)

Mohammad 38)

가

24,40)

3

가

SPADNS 41)

3.01 ± 0.31mm, 3.38 ± 0.38mm,
2.72 ± 0.34mm, 3.14 ± 0.26 mm

가

가 100 Mℓ 가 .
가
1966 Frant Ross⁴²⁾ 가 가
가

40) 가 가
가

0.37mg/ , 0.46 mg/
가 Yoshida 가 가
43) 가 가 가

가 가 IV.
가 Yoshida 가
43) 가 가

clearance () 28
野原⁴⁴⁾ () 21
가

가 1.
가 2.
가 3.
가 가
($p < 0.001$ = -0.526).

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- Abstract -

The Urinary Fluoride Concentration and Periodontal Condition in Postmenopausal Osteoporotic Women

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There were few reports about the fluoride concentration in bone and osteoporotic women. This study was designed to evaluate the relationship between the urinary fluoride concentration and periodontal condition in osteoporotic old women. Twenty-eight postmenopausal women (Test group) and twenty-one premenopausal women (Control group) were examined.

Bone mineral density (BMD) of lumbar spine (L2 - L4) was measured by dual energy X-ray absorptiometry (DEXA). The urine samples were collected at early morning and determined with the help of a fluoride-specific electrode and Tisab-buffered samples.

The results were as follows.

1. The mean urinary fluoride concentration in test and control group showed statistically no difference.

2. The bone mineral density (BMD) of the spine in test group was significantly lower than control group ($p < 0.05$).
3. The significant negative correlation was found between BMD level and age after menopause ($p < 0.001$, $r = -0.526$).
4. The urinary fluoride concentration was not correlated with age, age after menopause and bone mineral density.
5. The urinary fluoride concentration was not correlated with periodontal condition.